



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,917	01/10/2006	Neil Barton	021500-145	5444
21839 7590 03/02/2009 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
EXAMINER ROBINSON, LAUREN E				
ART UNIT		PAPER NUMBER		
1794				
NOTIFICATION DATE		DELIVERY MODE		
03/02/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/563,917

Applicant(s)

BARTON ET AL.

Examiner

LAUREN ROBINSON

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11 and 35-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11 and 35-67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicants' argument on page 8, paragraph 3 of their remarks, filed December 5, 2008, regarding a typographical error in claim 25 which recited dependency on previous claim 1 rather than claim 11 and that the subject matter within claim 25 should be included in the elected Group II is persuasive. However, as the present listing of claims deletes claim 25, the above argument is moot.

Applicant's election with traverse of Group II, claims 11-24 in the reply filed on December 5, 2008 is acknowledged. The traversal, on page 8, paragraph 4 of their remarks, is on the ground(s) that it is believed that the claims of the present application do comply with the unity of invention requirement as the issue was not raised in the corresponding international application which includes similar claims. This is not persuasive because while the issue was not raised in the corresponding application, the examiner provided in the previous action that the technical feature present in both Groups of claims is taught in the art and therefore, the groups lack unity of invention.

Further, applicants argue that it is believed that the search required for the elected claims would likely extend into those areas where the non-elected claims would be searched and therefore, there would not be burden on the examiner to consider and examiner the additional claims. This is not found persuasive because burdensome is not a feature required in the unity of invention requirement.

For the above reasons, the requirement is still deemed proper and is therefore made FINAL.

Claim Objections

Applicant is advised that should claim 53 be found allowable, claim 66 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicant is advised that should claim 54 be found allowable, claim 66 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 11, 35-36, 41, 53-54, 66 and 67 are rejected under 35 U.S.C. 102(b) as being anticipated by Byker et al. (US PN. 6,446,402).

Regarding claim 11: Byker et al. teach a laminated glazing (abstract, Figures) which can be used in vehicles. The reference teaches that the laminated glazing is comprised

of two plies of glass (Col. 15, lines 30-45), which can be body-tinted (Col. 15, lines 54-60 and Col. 18, lines 43-65), with a polyvinylbutyral (Col. 11, lines 10-44, Col. 15, all, Example. 4) interlayer sheet laminated between (Col. 15, lines 30-45). The examiner notes that according to paragraph 0037 within the applicants' disclosure, a polyvinyl interlayer corresponds to "transparent plastic" and as such, the above interlayer meets applicants' claimed "transparent" limitation.

Further, the plies are illustrated as 20 and 21 in the figures and the glazing has a low emissivity film on an interior surface of the glazing as represented by 70 (Figure 1c, Col. 24, lines 24-35) (**Claim 11**).

Regarding claim 35: Also, the reference teaches that the above plastic interlayer can be body-tinted (Col. 14, lines 54-60, Col. 15, lines 30-45, and Col. 18, lines 43-65) (**Claim 35**).

Regarding claim 36: Byker et al. also teach that the glass plies can be clear glass (Col. 14, lines 51-58) (**Claim 36**).

Regarding claims 41, 53-54, 66 and 67: The interlayer can include materials that absorb near infrared radiation (Col. 18, lines 43-67 and Col. 19, lines 1-5) (**Claims 41, 53-54, 66 and 67**).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 39-40, 42-46, 48, 50, 52, 55-60 and 63-64 are rejected under 35 U.S.C. 103(a) as being obvious over Byker et al. (US PN. 6,446,402) as applied to claims 11, 35 and 36.

Regarding claims 42-43 and 55-56: As discussed, Byker et al. discloses a laminated glazing for vehicles as disclosed in claims 11, 35 and 36. The reference also teaches that the glass plies can each have a thickness of between 20 micron to 8 cm (0.02mm to 80mm) (Col. 15, lines 45-50), the interlayer can have a thickness of 0.001 to 0.1cm (0.01mm to 1mm) (Col. 14, lines 1-10), and that a barrier layer can be applied therein having a thickness of 100 to 1000nm (0.0001mm to 0.001mm) (Col. 17, lines 60-65). However, *they do not disclose the overall glazing thickness with the low E coating included.*

While the reference does not specifically disclose the above limitation, the examiner notes that it is known in the art that thickness of an overall glazing is affected by the thickness of layers within and said layer thickness is a result effective variable as when adjusting said thickness, optical and/or physical properties of the overall glazing will change. Therefore, through routine experimentation of optimizing layer thicknesses, which will in turn change the overall glazing thickness to any desired thickness, desired properties, can be obtained. For example, it is known in the art that the thickness of layers such as the low E coating, colored interlayers, barrier layers that absorb certain wavelengths as disclosed in the reference, etc. will affect optical properties of reflection,

etc. and the reference additionally discloses that thickness affects flexibility of the glazing (Col. 15, lines 45-50).

As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Byker et. al. to include that the thickness of each layer can be optimized to any value, including values that would produce the applicants' overall thickness, in order to obtain any desired optical results, such as reflection/absorption within the glazing (**Claims 42-43 and 55-56**).

Regarding claims 44-46 and 57-60: Byker et al. also teach that the interlayer can have an absorbing material which absorbs both infrared and visible transmission and the amount of material can provide for the interlayer to absorb from a few percent to 50% or more of visible and/or infrared (energy) transmission (Col. 18, lines 58-67- Col. 19, lines 1-5). While the reference merely includes that a few percent to 50% or more of the visible light transmission and/or a few percent to 50% or more of the energy transmission is absorbed, the examiner notes that one of ordinary skill in the art would recognize that the percentage of each radiation not absorbed is the percentage transmitted. Also, the examiner notes that if a layer within a laminate has a certain value for the above % transmission parameters for both energy and/or visible, then it would be recognized that overall laminate would have the same values or less than that of one layer therein.

Therefore, the reference allows for a majority to 50% or less visible light transmission and/or a majority to 50% or less energy transmission which overlaps the applicants' claimed ranges and therefore, providing a prima facie case of obviousness.

See *In re Wertheim*, 541 F.2d 257, 191USPQ 90 (CCPA 1976) (**Claims 44-46 and 57-60**).

Regarding claims 39-40 and 52: Further, as discussed, the interlayer is taught to have a thickness of 0.001 to 0.1cm (0.01mm to 1mm) and the examiner notes that this range includes the applicants' claimed 0.76mm thickness. Therefore, the reference including that an interlayer this thick can have overlapping %visible and energy transmission of 50% as discussed above, creates a prima facie case of obviousness for the limitation of claim 52 for the same reason as above (**Claims 39-40 and 52**).

Regarding claims 48 and 63-64: As the above teaching is disclosed and the reference teaches as discussed, that the two glass plies can be either tinted or clear and the glazing can be used for a vehicle, the reference *does not specifically disclose that the outer ply is tinted using an inner ply with the low E coating therein being clear*.

While the above limitation is not discussed, the examiner notes that the reference teaches in one example that the laminate has a tinted glass substrate facing the outside of the glazing (sun exposure) and the inner ply is the glass with the low E coating (conceptual example 2). Although, the low E glass is not specifically included as being clear and the reference desires to have a tinted glass closest to the outside in order to absorb UV energy, it is the examiner's position that it would be recognized in the art that having the ply closest to an individual within a vehicle, for example, being clear would be advantageous since it would allow for enough visible light to pass through. For example, it would be recognized that if both plies were colored, then the glazing would be even darker than if only one was tinted and this would affect the level of visibility of

one to see out and since it is known that having enough visibility to see out of a vehicle is desired in the art, then one would recognize that if the outer ply is tinted while making the inner ply clear would provide for the level of darkness to be controlled so that one can have better visibility out the window, while the window is still able to absorb UV light traveling in the window.

As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Byker et al. to include that while the outer ply can be tinted, it would be advantageous to make the inner ply clear as it would aid in the control of the glazing darkness such as allowing one sitting inside the vehicle to have enough visibility to see out while still having enough tint on the outer side of the glazing to absorb UV radiation from the sun coming into the vehicle **(Claims 48 and 63-64)**.

Regarding claim 50: Further, as discussed, the overall glazing can be made to have a energy transmission of less than or equal to 50% due to the amount of energy absorption provided by the interlayer and the glazing will also have a visible transmission of 50% or less due to the same interlayer. However, the reference *does not specifically disclose that the glazing has a visible transmission of at least 15% and a total solar energy transmission not greater than 15% greater than its light transmission.*

Although the above limitation is not disclosed, the examiner notes that as discussed, the reference desires to have solar energy (heat) absorption which is provided by the tinted materials and the examiner notes that the reference teaches that the tint that provides the UV absorption also absorbs visible radiation (Col. 18, lines 60-67-Col. 19, lines 1-65). Also, it was discussed that it would be recognized that while it is

advantageous to have UV absorption, and therefore limit the amount of heat radiated into a vehicle, one would realize that the visible transmission would be affected and one would recognize that since visible transmission for one to see out of a glazing is beneficial, then attempts would be made to try to obtain high heat transmission but allow for just enough visible transmission desired by one with ordinary skill.

Furthermore, the examiner notes that while it would be recognized to adjust the heat transmission and visible transmission for the above purpose, one would know that these optical properties are result effective variables as they can be changed by the thickness and UV absorbing material composition of each layer within and through routine experimentation, desired optical properties can be obtained. As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Byker et al. to include that while UV absorption is desired in the reference, one would desire to have enough visible transmission therein and they could adjust the ratio to any value by optimizing the composition of UV absorbing material and thickness of layers within to any values, which will produce any desired ratio of visible to heat transmission including the applicants' values, in order to obtain enough UV absorption for the purpose of the glazing while maintaining enough visible transmission for one to see out **(Claim 50)**.

3. Claims 37-38, 51 and 65 are rejected under 35 U.S.C. 103(a) as being obvious over Byker et al. (US PN. 6,446,402) as applied to claim 11 in view of Higby et al (US Pub. 2002/0025899).

As discussed, Byker et al. teach a laminated glazing as claimed in claim 11. Also, the reference teaches that the glass plies can be tinted as discussed. However, the reference *does not teach that the tinted glass has a colourant portion including the applicants' composition and the glass of this composition having the applicants' claimed visible transmission and an energy transmission when the glass is at a thickness of 2.1mm as claimed.*

Consider the tinted glass has a colourant portion including 0.5 to 4% by weight of the glass of total iron calculated as Fe₂O₃

Higby et al. teach UV absorbing glass of neutral tint that provides sufficient visible transmission (abstract). The reference teaches that the tinted glasses can be used for glazings for vehicles (0002) and that it was provided with 0.3 to 0.7% total iron calculated as Fe₂O₃ (Claim 11), wherein 21% of said total is ferrous (FeO) (0010) which corresponds to around 0.15% by weight of glass being of FeO. Also, the reference teaches that 3 to 25 ppm cobalt oxide calculated as Co₃O₄ can be added as well to provide color (Claim 11). They teach that compositions having neutral tint (0006) allows for at least 70% visible transmission and a transmitted energy of at least 12% lower than the above visible (58% or lower transmitted energy).

Byker et al. and Higby et al. disclose analogous art related to tinted glass glazing used in vehicles. From this, it is the examiner's position that if one desired to have neutral color tinted glass glazings in order to allow for enough visible transmission but still have low UV transmission, they would find it advantageous to use the glass composition taught by Higby et al. Also, the examiner notes that Byker et al. does not

limit that visible transmission has to be low in the glass plies and as discussed, one would recognize from Byker et al. that glass plies would advantageously have enough visible transmittance to see out. Therefore, one would also recognize that while the ply is still colored in the reference, it could have the advantage of being visible transmissive by using the composition of Higby et al. As such, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Byker et al. to include the glass composition of Higby et al. in order to produce a colored tint that provided UV absorption but also allowed for visible transmission to see through the window.

Consider the glass of this composition having the applicants' claimed visible transmission and an energy transmission when the glass is at a thickness of 2.1mm as claimed.

While the above limitation is not disclosed, the examiner notes that the claim merely recites that the glass with the claimed composition when placed at a thickness as claimed will have the transmission properties. Therefore, the examiner notes that the glass in the reference does not necessarily have to have the claimed thickness but merely be capable of having the claimed properties at that thickness. The reference's composition of the glass as modified is now the same as the applicants' composition and although it does not specify values within, it is the examiner's position that the glass will have the same properties as the applicants' when subjected to the same conditions. For example, if the modified glass in Byker et al. was subjected to having a thickness of 2.1mm, then it would inherently have the applicants' transmission properties (**Claims 37-38, 51 and 65**).

4. Claims 47, 49 and 61-62 are rejected under 35 U.S.C. 103(a) as being obvious over Byker et al. (US PN. 6,446,402) as applied to claims 11, 35 and 36, in view of Baudin et al. (US PN. 4,910,088) .

As discussed, Byker et al. teach the glazing laminates of claims 11, 35 and 36. However, the reference *does not teach that the laminated glazing that can be used as a vehicle glazing can be used as a windscreen or that the low E coating is a pyrolytic coating.*

Baudin et al. teach vehicle windows (title) such as a glazing vehicle window which can be in laminate form. They teach that laminates such as these wherein the laminate is comprised of two glass sheets laminated together wherein one sheet has an outer coating therein, has the capability to retain broken fragments of glass if glass therein ever breaks and therefore, provides safety which is advantageous for use in vehicle windscreens (Col. 4, lines 35-53). Also, Baudin et al. teach that the coating on the external side of one of the above sheets is a low emissivity coating (abstract) and that the low E coating should be a pyrolytic coating due to these types of coatings providing for low diffuse light transmission (Col. 4, lines 59-64).

Byker et al. and Baudin et al. are related due to both teaching window glazings used in vehicles. Also, both teach that the glazing is a laminated of two glass plies laminated together with a low E coating on one sheet. Although the low E coating is different, one of ordinary skill in the art would recognize from Baudin et al. that a laminate with the structure of Byker et al. would be able to function in the same safety manner as above and therefore, it would be obvious to at least try the glazing for the

applications of a windscreen and that since Baudin et al. teaches that low E coatings in general, not limited to tin oxide, should be pyrolytic as it provides for low light diffusion, one would recognize that it would be at least obvious to try to make it pyrolytic as low light diffusion is advantageous for low E coatings as known in the art. As such, it is the examiner's position that it would have been obvious to one of ordinary skill in the art at the time of invention to try and modify Byker et al. to include that the laminate glazing can be used as a windscreen in order to provide a windscreen structure with safety characteristics and that the low E coating can be made pyrolytic in order to obtain low light diffusion on the surface of the glass sheet within the laminate (**Claims 47, 49 and 61-62**).

Response to Arguments

Applicant's arguments filed December 5, 2008 have been fully considered but they are not persuasive.

Applicants argue throughout that Byker et al. does not teach the applicants' invention of claim 11, which recites that the laminate glazing consists essentially of two glass plies with a transparent plastic interlayer between and a low e coating on an inner surface of the glazing, because Byker's window structure includes more than two glass substrates, a transparent plastic interlayer and the low e coating. Specifically, applicants argue that the structure in Byker also includes a thermochromic layer which is not encompassed by claim 11 and which materially changes the characteristics of the glazing.

The above argument is not persuasive because first, as the applicants recite a broad range of effects along with numerous embodiments of their glazings, although they argue reduced heat, it does not appear that the applicants have provided a clear indication in their specification or claims of what the basic and novel characteristics actually are or what constitutes a material change for said characteristics. For this reason, the phrase "consisting essentially of" is construed as equivalent to "comprising" and is examined as such in the action above. See MPEP 2111.03 [R-3].

Also, the examiner notes that throughout the applicants' specification, the laminate glazing is recited as being "comprised of" the above glass plies, interlayer and low e coating and this illustrates that the applicants' have not excluded additional materials such as a thermochromic material in Byker from being used.

Additionally, the examiner points out that in Byker, the thermochromic layer is a PVB with thermochromic material therein which becomes colored and reduces heat at elevated temperatures and becomes transparent which allows heat transmission through the interlayer at low temperatures. The interlayer of Byker is substantially similar to the interlayer within the applicants' numerous embodiments as for example, in one embodiment, applicants' include a colored interlayer to allow the interlayer to reduce heat and in another embodiment, the interlayer is transparent which one would recognize would allow heat therein. As the applicants' have not limited their interlayer to a material, but merely that PVB is therein, etc. and it is recognized that the thermochromic interlayer can function in the same manner and therefore, have the same characteristics as applicants' various argued embodiments, the examiner notes

that one of ordinary skill would recognize that the thermochromic interlayer will meet applicants' claimed invention.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **LAUREN ROBINSON** whose telephone number is (571)270-3474. The examiner can normally be reached on Monday to Thursday 6am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lauren E. T. Robinson
Examiner
AU 1794

/LAUREN ROBINSON/
Examiner, Art Unit 1794

/Timothy M. Speer/
Primary Examiner, Art Unit 1794